BioBoost
Accelerating biobased horticulture

Fertilisers regained from agri- and horticultural residuals

Crop	Sweet Pepper *Capsicum annuum L.* Cucumber *Cucumis sativus L.* Tomato *Solanum lycopersicum L.*
Croppart	Stem Leaf
Application area	Fine chemicals
Status	Start-up stage
Public availability	Non-public
Relevant plant compounds	Juice Fibers

Description

The agricultural and horticultural sector produce a lot of organic waste every year. The green waste, such as stems, leaves and rejected fruits from plants, is composted in a low-quality recycling process that releases a lot of CO2. Composting also releases a mineral residual stream (the juices that come out) that often ends up in the sewer system.

At the same time, there is increasing demand for organically grown food. This requires organic fertilisers in organic agriculture and horticulture. For example, organic nitrate is needed to make a plant grow faster.

Other substances are also important for good plant growth. Potassium promotes the absorption of water and carbon dioxide for photosynthesis by causing the stomata in the leaves to open or close. Phosphate has a stimulating role in root growth and youth growth.

In the Netherlands, only 4.4% of the total agricultural and horticultural area is used for organic cultivation. Despite the fact that there is a lot of interest, many growers do not dare to make the switch to organic because of the insufficient availability of an organic growth accelerator and other organic fertilisers.

That is why this consortium of agricultural and horticultural companies, led by Biota Nutri, has tested a solution with which agriculture and horticulture can become completely circular. The consortium is developing a prototype of a bio-installation for 3 important biological fertilisers in liquid form: potassium, nitrogen and phosphate.
After supplying the residual flows from growers, the plant juices are pressed and processed into organic fertilisers. This process is patented. Moreover, press cake is created when squeezing plant juices from the waste streams. In order to achieve a fully circular solution, the consortium has researched the properties of the press cake from the residual flows, as well as which applications the fibers are suitable for.

These partners works together in this project:

Biota Nutrients, project lead and supplier of organic fertilisers

Tesselaar Alstroemeria, grower

Maatschap C.A. & N. Van der Sterre, Bleiswijk, organic grower of unions, Brussels Sprouts and beans

Firma T.P.M. Van der Meer, Oud-Ade, grower of perennials

Stichting SIGN, processing of the press cake

Biotech Microbials, research

This project is co-financed by POP3 subsidy from the Province of South Holland and the European Union *"Europe Invests in its Countryside"*

Examples of end products

provincie Zuid-Holland

Circular agriculture and horticulture through the recycling of organic waste streams into organic fertilizers and fibers.

This POP3 project is developing processes to press organic waste streams from five agricultural and horticultural companies and fully recycle them into various organic fertilizers. Research is also being conducted to determine the applications for which the remaining press cake is suitable.

Research topics

Upscaling hurdles

How will we scale up production?

Access to remnant nutrients

How can we organically access all remnant nutrients in the fibers?

Pros and cons

- Circular
- Organic
- Reduction of carbon emissions

- Expensive
- Little known

Used conversion methods

Mechanical-Physical processes

Fiber separation

Separation

Resources

https://www.biota.nu Initiative website

SIGNaal Publication